33/9/39 (Item 18 from file: 347)
DIALOG(R)File 347:JAPIO

00903473
HEAT-ROLLER FIXING DEVICE

PUB. NO.: **57-053773 [JP 57053773 A]**
PUBLISHED: **March 30, 1982 (19820330)**
INVENTOR(s): KIKUCHI TOSHIYUKI
ASAHINA YASUO
APPLICANT(s): RICOH CO LTD [000674] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 55-128092 [JP 80128092]
FILED: September 16, 1980 (19800916)
INTL CLASS: [3] **G03G-015/20**
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines)
JOURNAL: Section: P, Section No. 128, Vol. 06, No. 129, Pg. 47, July 15, 1982 (19820715)

ABSTRACT

PURPOSE: To achieve fixation with uniform temperature distribution without waste of energy even when a **paper** with narrow paper passing **width** is used, by forming the mandrel of a **heat roller** by using a material with low thermal conductivity and by dividing a heater into two and arranging them in shifting their positions each other.

CONSTITUTION: A **heat roller** device consists of a **heat roller** 1 and a pressure roller pressed against it. The mandrel 5 of the **heat roller** 1 is made of a material having <=100kcal/m.h.deg thermal conductivity .lambda., such as stainless steel (2mn thickness) having .lambda.=14. In the mandrel 5, two heaters 6 and 7 having light-emission length L(sub 1)/2 which is a half the overall length L(sub 1) of the roller are arranged in shifting their positions mutually and arranged so as to make the light emission lengths of the both equal to the roller overall length L(sub 1). On the circumferential surface of the mandrel, **two temperature detecting elements** 8 and 9 are provided corresponding to the heaters 6 and 7. When a recording paper of half size or smaller is used, only the heater 6 is turned on and the heater 7 is not used.

33/9/7 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015071926
WPI Acc No: 2003-132444/200313
XRPX Acc No: N03-105210
Color image forming apparatus e.g. printer, has controller that halts actuation heaters in pressure and **fixing rollers**, when **temperature** sensed by sensor at **non-paper-feed area** of **fixing roller** exceeds preset value
Patent Assignee: CANON KK (CANO)

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002304089	A	20021018	JP 2001110028	A	20010409	200313 B

Priority Applications (No Type Date): JP 2001110028 A 20010409

Abstract (Basic): JP 2002304089 A

NOVELTY - The apparatus has a **pair** of **detectors** (4A,4B) that are **provided to non-paper-feed area and paper feed area** of **fixing** and pressure **rollers** (1,2), respectively. A controller halts the actuation of **heaters** in corresponding **rollers**, when the **temperature** sensed by the sensor at the non-paper-feed area of the **fixing roller** exceeds a preset value.

USE - Color image forming apparatus e.g. electrophotographic printer such as laser printer, LED printer, copier and facsimile.

ADVANTAGE - Enables maintaining appropriate **fixing temperature** by suitably controlling the heaters in **fixing** and pressure sensors and prevents transfer of **toner** to the transcription material and hence a highly reliable image is obtained.

DESCRIPTION OF DRAWING(S) - The figure shows the positional relationship of **temperature** sensors arranged in the **fixing roller** and pressure **roller**. (Drawing includes non-English language text).

Fixing roller (1)
Pressure **roller** (2)
Detectors (4A,4B)
pp; 9 DwgNo 3/6

Title Terms: COLOUR; IMAGE; FORMING; APPARATUS; PRINT; CONTROL; HALT; ACTUATE; HEATER; PRESSURE; **FIX**; ROLL; **TEMPERATURE**; SENSE; SENSE; NON; PAPER; FEED; AREA; **FIX**; ROLL; PRESET; VALUE
Derwent Class: P84; S06; T04; W02
International Patent Class (Main): **G03G-015/20**
International Patent Class (Additional): **G03G-015/01**; H05B-003/00
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S06-A06A; S06-A14B; S06-A14C; T04-G04; T04-G10A; W02-J02B; W02-J03A5; W02-J03A7

33/9/8 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014290626
WPI Acc No: 2002-111327/200215
XRPX Acc No: N02-083313
Heater for image forming apparatus such as laser beam printer, copier, includes thermometry element accommodated within housing in parallel to **another thermometry element** and contacts with heater
Patent Assignee: CANON KK (CANO)

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001356621	A	20011226	JP 2000173830	A	20000609	200215 B

Priority Applications (No Type Date): JP 2000173830 A 20000609

Abstract (Basic): JP 2001356621 A

NOVELTY - A heater unit (3) heats the toner image (T) so as to fix the image on a recording paper (P). A thermometry element (5) detects the temperature of the heater and outputs a electricity supply control signal to a central processing unit (CPU) (24) to maintain fixed **temperature. Another thermometry** element accommodated within a housing (100) in parallel, and contacts with the heater. The thermometry **elements** are respectively arranged **within and out of** area where minimum **width** of **paper** passes through.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for image forming apparatus.

USE - For image forming apparatus (claimed) such as copier, laser beam printer, etc.

ADVANTAGE - By installing the inexpensive thermometry element, the cost due to electric safe specification and head substrate width are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the outline block diagram of the heater. (Drawing includes non-English language text).

Heater unit (3)
Thermometry element (5)
CPU (24)
Housing (100)
Record paper (P)
Toner image (T)
pp; 8 DwgNo 1/5

Title Terms: HEATER; IMAGE; FORMING; APPARATUS; LASER; BEAM; PRINT; COPY; THERMOMETER; ELEMENT; ACCOMMODATE; HOUSING; PARALLEL; THERMOMETER; ELEMENT; CONTACT; HEATER
Derwent Class: P84; S06; X25
International Patent Class (Main): **G03G-015/20**
International Patent Class (Additional): H05B-003/00
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S06-A06A; X25-B01D

21/9/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010624089
WPI Acc No: 1996-121042/199613
XRPX Acc No: N96-101485
Key display device for **copier**, facsimile - has mode display control unit that controls display of mode of operation
Patent Assignee: CANON KK (CANO)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8016934	**A**	**19960119**	**JP 94170227**	**A**	**19940629**	**199613 B**

Priority Applications (No Type Date): JP 94170227 A 19940629
Abstract (Basic): JP 8016934 A

The device comprises of a colouration display for start operation. When the power supply is switched 'ON' and if warming is not completed, the state is **indicated** by the colouration **display. When warming is completed, the start mark is made green.** A mode display control unit controls display of a mode of operation.

ADVANTAGE - Prevents incorrect operation of resources. Reports mode of operation reliably.

21/9/2 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

02356691
FIXING DEVICE

PUB. NO.: 62-273591 [JP 62273591 A]
PUBLISHED: November 27, 1987 (19871127)
INVENTOR(s): ITAYA KEIJI
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 61-116996 [JP 86116996]
FILED: May 21, 1986 (19860521)
INTL CLASS: [4] G03G-015/20; H05B-003/00; H05B-003/42
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 43.4 (ELECTRIC POWER -- Applications)
JAPIO KEYWORD: R131 (INFORMATION PROCESSING -- Microcomputers & Microprocessers)
JOURNAL: Section: P, Section No. 701, Vol. 12, No. 156, Pg. 142, May 13, 1988 (19880513)

ABSTRACT

PURPOSE: To miniaturize a fixing device and, at the same time, to facilitate its heating area control, by providing plural electrodes which supply power from a power source to a heating resistance layer in corresponding to the width of a recording member.

CONSTITUTION: When a fixing roller 6 is preheated by means of a heater section 18 and the roll surface reaches a fixed temperature, **a 'ready' display indicating that copying operations can be started** is displayed and the size P of transfer paper is obtained. Then an electrode interval X is compared with the transfer paper size P. When P<=X, the number (n) of copies to be taken is obtained and copying operations are performed. When n=1, the copying operations are immediately started. When n>=2 and P<X, electrodes having an interval smaller than the X are selected and (n) sheets of copies are taken. When P>=X, electrodes having an electrode interval larger than the X are selected and electrode which make P=X are set out of the selected electrodes. Thereafter, the display of 'wait' is made, to raise the temperature of section, to which no power supply has been made, and the roll surface is heated. After a fixed time is elapsed, the 'ready' display is made an an inputted number (n) of copies is obtained, then, copying operations are carried out. Therefore, the heating area width can be adjusted easily and this fixing device can be miniaturized.

33/9/10 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013254491
WPI Acc No: 2000-426374/200037
XRPX Acc No: N00-318001
Toner image **fixer** on paper for printers, copiers, has control unit to supply or switch off current to heater depending on detection of **temperature sensors**
Patent Assignee: HITACHI KOKI KK (HITO)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2000147941	A	20000526	JP 98323171	A	19981113	200037	B

Priority Applications (No Type Date): JP 98323171 A 19981113
Abstract (Basic): JP 2000147941 A
NOVELTY - The **temperature detectors** (7) are arranged equally spaced, axially along outer surface of a **heating roller** (1). **Another temperature detector** (6) **detects** output of a **pair** of thermistors (4,5) which detect **roller** to have reached predetermined **temperatures**. The control unit varies supply of electricity to heater, based on detection of both **temperature detectors**.
DETAILED DESCRIPTION - The thermistors are arranged on outer circumferential surface of the **heating roller** to detect the **roller** to have reached predetermined first and **second temperatures**. The output of the thermometry element is detected by a sensor provided in opposite direction. The supply of electricity is varied by control unit to heater based on detection of both **temperature detectors**.
USE - In printers, copiers to copy **toner** image on paper.
ADVANTAGE - Prevents burning of paper which coiled around **heating roller** as excessive **heating** of **roller** is prevented.
DESCRIPTION OF DRAWING(S) - The figure shows block diagram of **toner fixer**.
Heating roller (1)
Thermistors (4,5)
Temperature detectors (6,7)
pp; 5 DwgNo 1/5
Title Terms: **TONER**; IMAGE; **FIX**; PAPER; PRINT; COPY; CONTROL; UNIT; SUPPLY; SWITCH; CURRENT; HEATER; DEPEND; DETECT; **TEMPERATURE**; SENSE
Derwent Class: P84; S03; S06; T06
International Patent Class (Main): **G03G-015/20**
International Patent Class (Additional): G01K-007/22; G01K-013/08; G05D-023/24; H05B-003/00
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S03-B01F; S06-A06A; S06-A14B; T06-B13B1

33/9/11 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012907279
WPI Acc No: 2000-079115/200007
XRPX Acc No: N00-062380
Heating roller surface **temperature** control arrangement used in electrophotographic printer - includes controllers which perform ON and OFF of set of **heaters** based on **heating roller temperature** and predetermined printing speed, **paper width** and ream weight respectively
Patent Assignee: HITACHI KOKI KK (HITO)

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 11327354	**A**	**19991126**	**JP 98133377**	**A**	**19980515**	**200007**	**B**

Priority Applications (No Type Date): JP 98133377 A 19980515
Abstract (Basic): JP 11327354 A
NOVELTY - The heaters (12a-12d) are arranged inside the **heating roller** in axial direction. ON and OFF of heaters (12a-12c) is performed by a controller (16) based on the output of **heating roller temperature detectors** (15a-15c), respectively. **Another** controller (14) varies energizing time of a heater (12d) based on predetermined printing speed, **paper width** and ream weight. DETAILED DESCRIPTION - The heat generating area of the heaters (12a-12c) is smaller than that of the heater (12d) and are arranged inside the **heating roller** in axial direction. **Temperature** of the heaters (12a-12d) are detected by detection units (15a-15d) respectively which are arranged on the outer circumferential surface of the **heating roller**. The **temperature** of the heater (12d) is regulated to lower value for **fixing toner** image on paper of minimum ream weight.
USE - Heat **fixing** controller in **fixing** apparatus used in electrophotographic printer.
ADVANTAGE - Stable printing quality is obtained since the **temperature** of the **heating roller** is controlled efficiently. DESCRIPTION OF DRAWING(S) - The figure shows the schematic block diagram of heat **fixing** apparatus. (12a-12d) Heaters; (14,16) Controllers; (15a-15d) **Temperature detectors**.
Dwg.1/9
Title Terms: HEAT; ROLL; SURFACE; **TEMPERATURE**; CONTROL; ARRANGE; ELECTROPHOTOGRAPHIC; PRINT; CONTROL; PERFORMANCE; SET; HEATER; BASED; HEAT; ROLL; **TEMPERATURE**; PREDETERMINED; PRINT; SPEED; PAPER; WIDTH; REAM; WEIGHT; RESPECTIVE
Derwent Class: P84; S06; T04; T06; U24; X12; X25
International Patent Class (Main): **G03G-015/20**
International Patent Class (Additional): G05D-023/19; H02J-001/00
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S06-A06A; S06-A14B; T04-G04; T04-G10A; T06-B13B1; U24-H; X12-H01D; X25-B01D; X25-B04

33/9/12 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012285106
WPI Acc No: 1999-091212/199908
XRPX Acc No: N99-067158
Electrophotographic image forming apparatus e.g. laser printer - detects **temperature** of **heating roller** for **fixing** **toner** image on paper and polygon motor is switched ON during print instruction reception when required **temperature** is reached
Patent Assignee: RICOH KK (RICO)

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 10326070	A	19981208	JP 97135020	A	19970526	199908	B
JP 3571175	B2	20040929	JP 97135020	A	19970526	200465	

Priority Applications (No Type Date): JP 97135020 A 19970526
Abstract (Basic): JP 10326070 A

The apparatus has a photoreceptor whose top surface is electrified uniformly by an electrification unit. Laser light is emitted based on an image data and based on the resolution of image data a polygon mirror is rotated at regular speed by a polygon motor and deflection scanning of laser light is performed. By irradiation of electrification surface of the photoreceptor by a laser write-in unit, an electrostatic latent image is formed on the photoreceptor.

The latent image formed on the photoreceptor is developed by an image developer and a **toner** image is obtained. The **toner** image is output to a paper fed by a feed unit from a paper accommodation unit. Heat **fixing** of the **toner** image is done on the paper by a **heating roller** (10a). **Fixing** of **toner** image is done when the **temperature** of the **heating roller detected** by **two** **temperature detectors** (41,42) reaches the required **temperature**. On reaching the required **temperature**, the polygon motor is switched ON by a processor during reception of print instruction.

USE - E.g. digital copier, facsimile, optical printer and compound machine.

ADVANTAGE - Enhances control efficiency of apparatus during print instruction reception. Reduces power consumption and offers long life of heater or polygon motor.

Dwg.1/6
Title Terms: ELECTROPHOTOGRAPHIC; IMAGE; FORMING; APPARATUS; LASER; PRINT; DETECT; **TEMPERATURE**; HEAT; ROLL; **FIX**; **TONER**; IMAGE; PAPER; POLYGONAL; MOTOR; SWITCH; PRINT; INSTRUCTION; RECEPTION; REQUIRE; **TEMPERATURE**; REACH
Derwent Class: P75; P84; S03; S06; T04; W02
International Patent Class (Main): **G03G-021/14**
International Patent Class (Additional): B41J-002/44; **G03G-015/20**
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): S03-B01F; S06-A06A; S06-A14B; T04-G04; W02-J02B2

33/9/13 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012182153
WPI Acc No: 1998-599066/199851
XRPX Acc No: N98-466456

Thermal **fixing** unit in xerographic imaging device - achieves near uniform axial **temperature** distribution through advance **warm** -up run of **fixing** and pressurising **rollers** together, selectively energising **heater** elements within **fixing** **rollers**

Patent Assignee: COPYER KK (COPY)

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 10268693	A	19981009	JP 9787706	A	19970321	199851	B

Priority Applications (No Type Date): JP 9787706 A 19970321

Abstract (Basic): JP 10268693 A

The thermal **fixing** unit consists of a **fixing** **roller** and a pressure application **roller** that run in synchronization and **fix** the **toner** image transferred onto the paper sheet by heat addition as the paper sheet moves between these **rollers**. The **fixing** **roller** has a set of heater **elements** internally located at various axial positions, along with **another** set of **temperature** **sensors**.

The heater **elements** are selectively energised, with control over energising times. The initial **warm**-up of the **fixing** and pressure application **rollers** and **temperature** stabilisation over them is accomplished by advance running of both together, over specific duration, before the image carrying paper sheet is introduced between these **rollers**.

ADVANTAGE - Generates quality images free of **fixed** spots through bringing down of **temperature** gradients along **roller** axes.

33/9/14 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011856579
WPI Acc No: 1998-273489/199825
XRPX Acc No: N98-214774
Fixing device for electrophotographic copier - has **two temperature detection** devices controlling switching of heating current for electric **heating** element within **heating roller** of **fixing** device
Patent Assignee: HITACHI KOKI KK (HITO)
Inventor: AITA S; ISHIZAWA K; TAKAYASU H; UDO H; WATANABE I; YOKOKAWA S

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19747102	A1	19980514	DE 1047102	A	19971024	199825	B
JP 10186947	A	19980714	JP 97248388	A	19970912	199838	
US 5862436	A	19990119	US 97956790	A	19971023	199911	

Priority Applications (No Type Date): JP 97248388 A 19970912; JP 96283737 A 19961025
Abstract (Basic): DE 19747102 A

The **fixing** device has a **heating roller** (11a) containing a **heating** element (14) and a cooperating pressure **roller** (11b). The recording medium (16) carrying the **toner** image is passed between the **heating** and **fixing rollers** to **fix** the image to the surface of the recording medium. A **temperature** detection device (18) has a **temperature** detection element (15) detecting the **temperature** of the **heating roller** surface at a point facing a sensor head (17).

A further **temperature** detection device (19) has a number of detection **elements** spaced along the axis of the **heating roller**. The signals from both **temperature** detection **devices** control the switching of the heating current for the heating element.

USE - For **fixing toner** image in electrophotographic copier.

ADVANTAGE - Ensures accurate control of **heating roller** for **fixing** device.

33/9/20 (Item 19 from file: 350)

004092595 WPI Acc No: 1984-238136/198439 XRPX Acc No: N84-178171
Thermal fixing roller for photocopier - has separate heaters for middle and end sections
Patent Assignee: HOECHST AG (FARH)
Inventor: EULER R

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 3309398	A	19840920	DE 3309398	A	19830316	198439	B
EP 121772	A	19841017	EP 84102432	A	19840307	198442	
US 4585325	A	19860429	US 84589006	A	19840313	198620	
EP 121772	B	19861029	EP 84102432	A	19840302	198644	
DE 3461123	G	19861204				198650	
CA 1220509	A	19870414				198719	

Priority Applications (No Type Date): DE 3309398 A 19830316
Abstract (Basic): EP 121772 A

A **fixing** device for **fixing** a **toner** image on copying material, comprising a heating unit arranged transversely to the direction of the copying material passage and being suitable for different copying material formats, which heating unit has, in its middle zone, a central heating element, and, in both its edge zones, a subdivided heating element with one **temperature** sensor, each, adjoined to the central and the subdivided heating **elements**, the **temperature** sensors being connected to a control system for the supply of current to the heating element, characterized in that the heating unit is a heating roll (10), in the interior of which a central coil (14) as heating element (11) is located in the middle zone (b), and one coil (15, 16), each, of a subdivided heating element (13) is located in the edge zones (a, c) respectively adjoining the left and right of the middle zone, that the central coil overlaps with each of the two coils (15, 16) in each edge zone (a, c), that the current supply to the heating **elements** (11, 13) is so controlled that on the surface of the heating roll (10) there results a **temperature** distribution in the axial direction which exhibits an extreme value (d; d') in the middle zone and maxima (e, f; e, f') near the two end faces (17, 18) of the heating roll (10) and that one **temperature** sensor (19) is located opposite to the extreme value (d; d') of the **temperature** distribution in the middle of the roll and **the other temperature sensor** (20) is located opposite to the middle of one of the edge zones (a, c) of the heating roll (10).

DE 3309398 A

The **heated roller**, has glass tube **heaters** through its centre. One heater has its windings (14) covering the central part of the **roller** and the other **heater** has two edge windings (15,16). Both heaters are linked to a central control and have separate **temperature** sensors (19,20).

The **thermal fixing roller** can handle different sizes of copy sheet without creasing and has a good **temperature** distribution along its length. This provides good quality copies without smearing.

USE - For multi-format photocopier.

Abstract (Equivalent): EP 121772 B

A **fixing** device for **fixing** a **toner** image on copying material, comprising a heating unit arranged transversely to the direction of the copying material passage and being suitable for different copying material formats, which heating unit has, in its

middle zone, a central heating element, and, in both its edge zones, a subdivided heating element with one **temperature** sensor, each, adjoined to the central and the subdivided heating **elements**, the **temperature** sensors being connected to a control system for the supply of current to the heating element, characterized in that the heating unit is a heating roll (10), in the interior of which a central coil (14) as heating element (11) is located in the middle zone (b), and one coil (15, 16), each, of a subdivided heating element (13) is located in the edge zones (a, c) respectively adjoining the left and right of the middle zone, that the central coil overlaps with each of the two coils (15, 16) in each edge zone (a, c), that the current supply to the heating **elements** (11, 13) is so controlled that on the surface of the heating roll (10) there results a **temperature** distribution in the axial direction which exhibits an extreme value (d; d') in the middle zone and maxima (e, f; e, f') near the two end faces (17, 18) of the heating roll (10) and that one **temperature** sensor (19) is located opposite to the extreme value (d; d') of the **temperature** distribution in the middle of the roll and the other **temperature** sensor (20) is located opposite to the middle of one of the edge zones (a, c) of the heating roll (10). (11pp)

Abstract (Equivalent): US 4585325 A

Heating **elements** sealed into glass cylinders are located inside a **heating roller**, parallel to a **roller** axis. One **heating** element consists of a coil in a middle zone of the **heating roller**, while the other **heating** element has two coils in edge zones of the heating roll.

Two temperature sensors are arranged respectively in the middle of the **heating roller** and near one of the end faces of the **heating roller**, at a small distance from the **heating roller** surface. The sensors are connected to a control system for the current supply to the heating **elements** and cuts this supply as soon as the **temperatures** measured by the sensors reach predetermined intended values.

33/9/22 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

08314071

FIXING DEVICE FOR ELECTROPHOTOGRAPHIC PRINTER

PUB. NO.: **2005-062331 [JP 2005062331 A]**
PUBLISHED: **March 10, 2005 (20050310)**
INVENTOR(s): TAKESHITA MASAMI
HARA DAISUKE
KAWASAKI KAZUHIKO
KUROHANE TOMOSHIGE
HASHIMOTO YASUSHI
APPLICANT(s): RICOH PRINTING SYSTEMS LTD
APPL. NO.: **2003-290211 [JP 2003290211]**
FILED: **August 08, 2003 (20030808)**
INTL CLASS: **G03G-015/20**; H05B-003/00

ABSTRACT

PROBLEM TO BE SOLVED: To provide a **fixing** device adaptable for various **paper widths**, in which stable thermal fixation without thermal breakage on a **heat roller** surface is possible and at the same time, to realize a low-cost and reliable electrophotographic printer by reducing power deviation of each phase on three phase alternating current supply for high-speed printing.

SOLUTION: The temperature of the **heat roller** surface is kept within specification by arranging **two temperature detectors** for **detecting** the surface temperature of the **heat roller**, selecting three **heating elements** out of four heating **elements** built in the **heat roller** according to information of the **paper width** in use, and heating the selected heat **elements** according to detected information of the temperature **detectors**.

07801664
IMAGE FORMING APPARATUS

PUB. NO.: **2003-295686 [JP 2003295686 A]**
PUBLISHED: **October 15, 2003 (20031015)**
INVENTOR(s): FUJII KENICHI
APPLICANT(s): CANON INC
APPL. NO.: **2002-101993 [JP 2002101993]**
FILED: **April 04, 2002 (20020404)**
INTL CLASS: **G03G-015/20; G03G-021/00; G03G-021/14**

ABSTRACT

PROBLEM TO BE SOLVED: To exert control so that, in the case where **sheet** of recording **paper** of a **width narrower** than the width of a heated **area** is passed through a **fixing** nip and consequently the temperatures of the ends of a heating element rise higher than usual, degrees to which the temperatures of the ends of the heating element rise as a result of the passages of the **sheet** is set to a fault detecting temperature or lower.
SOLUTION: The image forming apparatus (6) has: a heat means (1), a **temperature** control means (2) that controls the **temperature** of the heat means (1), **end temperature measuring means** (3) that measures the temperatures of the ends of the heated **area**, an end temperature monitoring means (4) that monitors the temperatures of the ends and controls the heating means (1), and a **paper** position estimating means (5) that estimates the position of **paper** to be transported.

33/9/25 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO

07489459
FIXING DEVICE, IMAGE FORMING DEVICE AND BOTH-SIDE IMAGE FORMING DEVICE

PUB. NO.: **2002-357977 [JP 2002357977 A]**
PUBLISHED: **December 13, 2002 (20021213)**
INVENTOR(s): AMITA AKIYASU
APPLICANT(s): RICOH CO LTD
APPL. NO.: **2001-135202 [JP 2001135202]**
FILED: **May 02, 2001 (20010502)**
PRIORITY: 2001-087652 [JP 200187652], JP (Japan), March 26, 2001 (20010326)
INTL CLASS: **G03G-015/20; G03G-015/00;** H05B-003/00

ABSTRACT

PROBLEM TO BE SOLVED: To prevent the occurrences of the wrinkles of transfer paper and the nonconformity of an image such as image blurring due to a **temperature** difference between the **center part and the end part** of a **fixing roller** by always keeping the **temperature** distribution of the **fixing roller** constant.
SOLUTION: A **fixing** device 22 has a **fixing roller** 1, a pressing **roller** 2, a first **heater** 3, a second heater 4, a first **temperature detecting** element 5, a **second temperature detecting** element 6, and a heater controlling part 9 or the like. When an unfixed **toner** image formed on the transfer paper P is successively thermally **fixed** on the several sheets of the transfer paper P and/or **fixing** processing speed at which the unfixed **toner** image formed on the transfer paper P is thermally **fixed** is comparatively high, the turn-on and turn-off of the first heater 3 and the second heater 4 are controlled by the heater controlling part 9 so as to always maintain the constant **temperature** difference between target **temperature** previously set in accordance with detected **temperature** by the first **temperature** detecting element 5 at which the second heater 4 is controlled and the detected **temperature** by the first **temperature** detecting element 5 while referring to the detected **temperature** by the **temperature** detecting **elements** 5 and 6.

33/9/26 (Item 5 from file: 347)
DIALOG(R)File 347:JAPIO

06010399
PAGE PRINTER

PUB. NO.: 10-293499 [JP 10293499 A]
PUBLISHED: November 04, 1998 (19981104)
INVENTOR(s): MATSUMOTO YOSHIO
APPLICANT(s): SEIKO EPSON CORP [000236] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 09-103727 [JP 97103727]
FILED: April 21, 1997 (19970421)
INTL CLASS: [6] **G03G-015/20**; B41J-011/48; G06F-003/12
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 45.3 (INFORMATION PROCESSING -- Input Output Units)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a page printer capable of printing on printing paper regardless of paper thickness by providing a mechanism capable of varying the temperature and the pressure of a **fixing** device in accordance with the paper thickness.

SOLUTION: As for the temperature control of a **heating roller** 2 in accordance with the paper thickness; three **thermosensors** 3 are installed inside the roller 2 so that one of them is set at the center of **paper width** , that is, the center of the roller 2, and further two are equally set on both sides one by one. Then, three themosensors 3 are constituted to realize the enlargement of the temperature variable area and the uniformity of the surface **temperature** of the roller **2** by an electronic control circuit. As for the pressure control of the roller 5 in accordance with the paper thickness; the spring loading of a spring for a pressure roller 6 is varied by a tension system so as to realize the step variation of the spring loading of the spring 6.

33/9/31 (Item 10 from file: 347)
DIALOG(R)File 347:JAPIO

03957184
IMAGE FORMING DEVICE

PUB. NO.: 04-322284 [JP 4322284 A]
PUBLISHED: November 12, 1992 (19921112)
INVENTOR(s): YABEI TOSHIYA
FUSHINO KIYOSHIZU
KAMIYA TAKUO
APPLICANT(s): RICOH CO LTD [000674] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 03-090621 [JP 9190621]
FILED: April 22, 1991 (19910422)
INTL CLASS: [5] **G03G-015/20; G03G-015/20**
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 44.7 (COMMUNICATION -- Facsimile)
JOURNAL: Section: P, Section No. 1511, Vol. 17, No. 157, Pg. 54, March 26, 1993 (19930326)

ABSTRACT

PURPOSE: To prevent the quality of an image from being deteriorated caused by the difference of temperature by idly rotating a **fixing roller** in a prescribed time based on a signal obtained by detecting the last transfer **paper** by an ejection detection means.

CONSTITUTION: Non-contacting type **temperature sensors** 9a-9c are provided in a central **area** and both end part **areas** on the **surface** of the **fixing roller 2** . Besides, the ejection **detection** means 12 which detects the ejection of the transfer **paper** is provided on a **paper** ejection roller 8 part. The detection means 12 is provided with a **paper** ejection sensor feeler 13, an actuator 15 coupled to the feeler 13 through a shaft 14 and a photosensor 16 which detects the movement of the actuator 15. Then, the plural **sheets** of transfer **paper** P2 whose **width** L2 is **narrower** than the width L1 of the maximum size A3 of a **paper** are successively copied and it is detected by the detection means 12 that the final transfer **paper** is ejected. Based on the detection signal, the **fixing roller** 2 is idly rotated in the prescribed time. Therefore, the irregularity of the temperature of the **fixing roller** 2 is eliminated.

33/9/34 (Item 13 from file: 347)
DIALOG(R)File 347:JAPIO

03745782
FIXING DEVICE

PUB. NO.: **04-110882 [JP 4110882 A]**
PUBLISHED: **April 13, 1992 (19920413)**
INVENTOR(s): TAKAMURA HIDEKAZU
APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 02-228244 [JP 90228244]
FILED: August 31, 1990 (19900831)
INTL CLASS: [5] **G03G-015/20**; G01K-007/22; **G03G-015/20**; G05D-023/00; G05D-023/19; H05B-003/00
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 22.3 (MACHINERY -- Control & Regulation); 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 43.4 (ELECTRIC POWER -- Applications); 44.7 (COMMUNICATION -- Facsimile); 46.1 (INSTRUMENTATION -- Measurement)
JOURNAL: Section: P, Section No. 1396, Vol. 16, No. 361, Pg. 26, August 05, 1992 (19920805)

ABSTRACT

PURPOSE: To prevent the overheating of a **heating roller** and the associated **heat** loss, firing, etc., and to improve the reliability electrical safety quality by disposing plural pieces of energization safety **devices** in prescribed positions so as to correspond to the max. and min. **paper** pass **widths**.

CONSTITUTION: P 1 is the **paper** pass **width** area of a small recording material, P 2 is the **paper** pass **width** area of the largest recording material and P 3 is a difference between the 1st width P 1 and the 2nd width area P 2. And 3rd and 1st temperature fuses FU 3, FU 1 are respectively disposed to face the **heating roller** part P 1 corresponding to the 1st width area P 1 and a **2nd temperature** fuse FU **2** is disposed to face the **heating roller** part P 3 corresponding to the 3rd width area P 3 respectively in proximity at a prescribed equal distance to the roller surfaces. The temperature rating of the 3rd and 1st temperature fuses FU 3, FU 1 is set at 192 deg.C and the **temperature** rating of the **2nd temperature** fuse FU **2** is set at 260 deg.C higher than the temperature rating of the 3rd and 1st temperature fuses FU 3, FU 1. The overheating of the **heating roller** occurring in the disorder of the temperature control circuit and heater energizing circuit of the **heating roller** and the generation of the consequent heat loss, fuming, firing, etc., of the device constituting parts are prevented with high reliability and the reliability of the electrical safety quality is enhanced.

30aug05 12:22:28 User259284 Session D3290.3

SYSTEM:OS - DIALOG OneSearch
File 2:INSPEC 1969-2005/Aug W3
File 6:NTIS 1964-2005/Aug W2
File 8:Ei Compendex(R) 1970-2005/Aug W3
File 248:PIRA 1975-2005/Aug W1
File 323:RAPRA Rubber & Plastics 1972-2005/Jul
File 144:Pascal 1973-2005/Aug W3
File 94:JICST-EPlus 1985-2005/Jul W1
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200555
File 347:JAPIO Nov 1976-2005/Apr(Updated 050801)
File 344:Chinese Patents Abs Aug 1985-2005/May
File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	694797	(SECOND OR 2 OR ANOTHER OR TWO OR PAIR??? OR DOUBLE OR 2ND-)(3N)(DETECT????? OR SENS??? OR MONITOR???? OR THERMODETECT???? OR THERMOSENS??? OR TEMPERATURE? ? OR THERMOMET????? OR THERMOCOUPL????)
S2	7628	IC=G03G? AND S1
S3	6760	(FIXING OR FIXER OR (ROLLER?? OR CYLIND????)(3N)(HEAT???? OR THERMAL??? OR FIX???)) AND S1
S4	22464	(WARM???? OR HOT OR HOTT????) AND S1
S5	150	S2:S4 AND (WIDER OR WIDEST OR WIDE OR WIDEN???? OR NARROW???? OR WIDTH????)(5N)(PAPER?? OR ROLLER?? OR CYLIND?????)
S6	149	RD S5 (unique items)
S7	1485	TANDEM(3N)(DETECT????? OR SENS??? OR MONITOR???? OR THERMODETECT???? OR THERMOSENS??? OR TEMPERATURE? ? OR THERMOMET???? OR THERMOCOUPL????)
S8	299	S7 AND (WARM???? OR HOT OR HOTT???? OR TEMPERATURE? ?) AND S7
S9	294105	TEMPERATURE? ? AND S1
S10	297672	S4 OR S8 OR S9
S11	4464	(S2:S3 OR S5:S7) AND S10
S12	2844	S11 AND FIX????????
S13	687	S11 AND TONER??????
S14	1172	S11 AND ROLLER??
S15	259	12AND13AND14
S16	10	(S5 OR S15) AND DETECTORS/AB
S17	54	(S5 OR S15) AND SENSORS/AB
S18	1	(S5 OR S15) AND THERMOSENSORS/AB
S19	0	(S5 OR S15) AND THERMOMETERS/AB
S20	9	(S5 OR S15) AND DEVICES/AB
S21	13	(S5 OR S15) AND ELEMENTS/AB
S22	2	(S5 OR S15) AND THERMOCOUPLES/AB
S23	237	(S5 OR S15) AND (PAPER?? OR SHEET????)
S24	90	(S5 OR S15) AND (REGION?? OR ZONE?? OR AREA?? OR MARGIN?? OR BORDER??? OR BOUNDAR??? OR EDGE??)
S25	2	(S5 OR S15) AND WIDER
S26	4	(S5 OR S15) AND NARROWER
S27	122	S16:S26 AND HEAT????(3N)(ROLLER?? OR CYLIND??????)

S28	56	S16:S26 AND SURFACE? ?(3N)(ROLLER?? OR CYLIND??????)
S29	21	(S5 OR S15) AND (PAPER?? OR SHEET????)(6N)(SURFACE? ? OR S-UBSTRATE? ?)
S30	698	(S5 OR S8 OR S15:S29)
S31	8	S30 AND (WIDER OR NARROWER)
S32	39	S16 OR S18:S22 OR S25:S26 OR S31
S33	39	RD S32 (unique items)
S34	1	PN=JP 57053773
S35	4168	S1:S30 AND (WIDER OR NARROWER)
S36	273	S35 AND FIX??????????
S37	11	S35 AND TONER??
S38	37	S35 AND ROLLER??
S39	1572	S35 AND (HOT OR HEAT???? OR TEMPERATURE? ? OR WARM????)
S40	151	S35 AND (READY OR INDICATOR)
S41	3	S35 AND (WARMED()UP)
S42	6	S35 AND (OPERATING()TEMPERATURE)
S43	8	36AND38
S44	87	36AND39
S45	11	36AND40
S46	29	39AND40
S47	91	S37:S38 OR S41:S43 OR S45:S46
S48	90	RD S47 (unique items)
S49	87	S48 NOT S33
S50	13	S49 AND READY
S51	6	S49 AND DETECTORS
S52	19	S50:S51

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       30aug05 12:47:43 User259284 Session D3290.4

File 342:Derwent Patents Citation Indx 1978-05/200553
       (c)  Thomson Derwent

      Set  Items  Description
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? e ct=jp 57053773

Ref   Items  Index-term
E1        1  CT=JP 57053765
E2        1  CT=JP 57053769
E3        0 *CT=JP 57053773
E4        1  CT=JP 57053774
E5        1  CT=JP 57053776
E6        1  CT=JP 57053784
E7        1  CT=JP 57053786

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  File   2:INSPEC 1969-2005/Aug W3
         (c) 2005 Institution of Electrical Engineers
  File   6:NTIS 1964-2005/Aug W2
         (c) 2005 NTIS, Intl Cpyrght All Rights Res
  File   8:Ei Compendex(R) 1970-2005/Aug W3
         (c) 2005 Elsevier Eng.  Info. Inc.
  File  94:JICST-EPlus 1985-2005/Jul W1
         (c)2005 Japan Science and Tech Corp(JST)
  File 248:PIRA 1975-2005/Aug W1
         (c) 2005 Pira International
  File 323:RAPRA Rubber & Plastics 1972-2005/Jul
         (c) 2005 RAPRA Technology Ltd
  File 144:Pascal 1973-2005/Aug W3
         (c) 2005 INIST/CNRS
  File 350:Derwent WPIX 1963-2005/UD,UM &UP=200555
         (c) 2005  Thomson Derwent
  File 347:JAPIO Nov 1976-2005/Apr(Updated 050801)
         (c) 2005 JPO & JAPIO
  File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.


Set     Items   Description
S1       2177   WARMED()UP
S2          6   READY(6N)WARMED AND READY(6N)UP
S3          6   1AND2
S4       1222   INDICAT?????(4N)WARM?????
S5        810   INDICAT?????(4N)READY
S6      46035   INDICAT?????(4N)DISPLAY??????
S7        362   WARM??????(4N)DISPLAY??????
S8          5   4AND5
S9         12   4AND6
S10        10   4AND7
S11        33   5AND6
S12         1   5AND7
S13        15   6AND7
S14       306   S5:S13 AND COPIER??
S15         1   S8:S13 AND COPIER??
S16         0   S8:S13 AND PHOTOCOPIER??
S17         0   S8:S13 AND XERO?????????
S18         2   S8:S13 AND ROLLER??
S19         1   S8:S13 AND TONER??
S20         0   S8:S13 AND FIX????????(5N)IMAG??
S21         3   S15:S20

? b 342
        30aug05 13:23:20 User259284 Session D3291.3

File 342:Derwent Patents Citation Indx 1978-05/200553
         (c) 2005 Thomson Derwent
Set     Items   Description
S1          1   CT='JP 8016934'
S2          1   PN=JP 62273591
S3          0   PN=JP 08016934
S4          1   PN=JP 8016934
S5          2   S2:S4
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? b 350
       30aug05 13:25:46 User259284 Session D3291.4

File 350:Derwent WPIX 1963-2005/UD,UM &UP=200555
       (c) 2005  Thomson Derwent

Set     Items   Description
S1          1   PN='JP 3651445B'
S2          0   PA='TAKAOKA SHOJI INC':PA='TAKAOKA SHOJI KK (TAKA-N)' AND -
             INDICAT????????
S3          0   PA='TAKAOKA SHOJI INC':PA='TAKAOKA SHOJI KK (TAKA-N)' AND -
             DISPLAY???????
```